WT-248

GSM 8 Ports Analog Gateway

User Manual

WITURA CORPORATION SDN BHD

WT-248 GSM 8 Ports Analog Gateway

GSM Gateway Introduction

Welcome to use our GSM Analog Gateway (also named as Analog Channel Bank/ SIM Bank) to enter a novel communication world, which absorbs high-tech and delicate design out of your imagine.

The GSM Analog Gateway enables you to quickly achieve the GSM cell telephone communication just via simple operations of wired telephone.

This briefing helps you understand the functions of GSM Gateway step by step. Before using that equipment, please read this briefing in details.

OVERVIEW

- 8 Voice channels are individually connected with 8 ports of GSM brand new industrial GSM modules
- Simple Installation "Easy Configuration via DTMF"
- LED GSM status display
- GSM Frequency Bands: 900/1800/1900Mhz tri- band, 850/900/1800/1900Mhz quad-band, Anti-Polarity Signal (Better reversal) for accurate billing
- High gain external antenna with 3m cable for optimal signal strength
- Quick call set up and release/echo cancellation
- 4 SIM per channel
- Individual Channel power supply for easy card replacement
- Thunderstorm and lighting protection

WT-248 APPEARANCE VIEW

Front View

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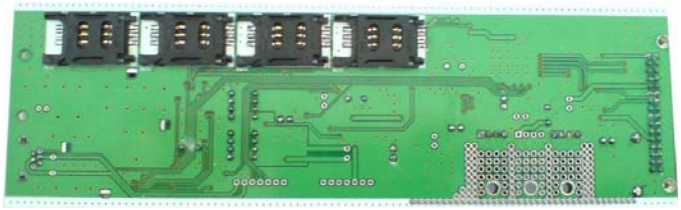
Rear View with Connection to Telephone & PC



View of 4 SIM Card Holder at the board of 1 Port

ATTENTION !!!

- Please read the following specific rules
  - Against the rules will cause danger or violate the law
- Echo off
  - Before using this equipment, please make sure your position has no echo off function for wireless radio frequency signal
- Interference
  - The similar to all mobile telephones, it is subject to the interference, which affects functions of the telephone
- Explosion district
  - At explosion districts or places signed "close wireless transmitting devices", please do not use the equipments
- Latent explosion environment
  - At environment that there is latent explode possibility, such as gas station, chemistry products, combustible liquid, air conveyance car or store warehouse etc., please do not use the equipments.
- Children
  - Do not let the children play the equipment. Children may be stabbed or hurt other people with the antenna. Children may damage the interface, or make telephone calls freely to increase your telephone expenditure.
- Maintenance
  - Only the qualified technicians can install or maintain the equipments. If the equipment aborts, please contact the dealer. Do not open the equipments or maintain them by groups and individuals without authorization to prevent damaging the equipments.

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- Antenna
  - Only approval antenna can be used, do not link the antenna which do not match with the equipments. The unqualified antenna in use will damage the equipments. Antenna must keep vertical and off the telephone, the antenna cable cannot be bound with telephone line together. Do not touch antenna or approach antenna in range of 10m during calling.
- Power
  - The equipments regularly use 110-220V AC
- Installation and connection:
  - Make sure the "Power Switch" on the panel is placed in break (the switch is placed in the "O" position) when installing the equipments and connecting with other equipments according to the guidebook. Operating with electricity may damage the equipments.
- Configuration
  - After the equipments installed, only after each route of the equipments has been system initially configured by dealers or network service provider, the equipments can perform formally. Only dealer or network service provider can initially configure the equipments system, avoiding the equipments damage due to the mistake of system configuration.
- Connecting to other equipments
  - While connecting to other equipments, please read the user guide carefully to acquire detailed safety guide. Do not connect to the products which do not match with the equipments.

SUMMARY

The design of the PRI Gateway (Analog Channel Bank) aims to provide a kind of standard frequency telephone in the area covered by the digital mobile network

The interface of the PRI Gateway (Analog Channel Bank) provides a transparent connection between the standard telephone and the mobile net, which has the function of emulation exchange and offers the following function:

- Dialing tone
- Dialing a number with DTMF
- The bell flow signal
- Versa pole signal

The exterior interface of the PRI Gateway (Analog Channel Bank) has:

- RJ-11 electric outlets connecting to telephone or fee counter
- Antenna electric outlets (FME)
- Pick up or hang up the telephone handset indicator
- The strong or weak signal indicator

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Configuration And Installation

1. The whole pack of the PRI Gateway includes:

• Analog Channel Bank (Main Unit)	1 set
• High Gain Antenna	2 pcs
• Antenna Splitter	2 pcs
• 110 – 220V AC Power Line	1 pcs
• Telephone Cord	8 pcs

2. Installation Procedure

The equipment provides digital GSM network communication, which required a valid SIM Card.

a) Put the GSM Analog Channel Bank in pedestal
b) Switch of the power on the behind-panel (switch is kept at "O")
c) Insert the valid SIM Card
   - Screw off the two fixed screws in the bottom front-panel, and remove the bottom front-panel
   - Insert the SIM Card in the correct direction (the most right hand route is from left to the right, others are from right to left)
   - Fix the bottom cover, and tighten the screws
d) Wiring antenna into antenna electric outlet
e) Connect one end of the line with the RJ-11 telephone outlet, and the other end with the telephone (fee counter)
f) Connect one end of a 85-240V AC power adapter into 110-220V power outlet, the other end into 220V power outlet on behind-panel
g) Open the power switch on behind-panel (switch is placed in "-" appearance)

After the equipments installed, each route of the equipments has to be initially systematic configured by dealer or network service provider to assure the formal operation of equipments.

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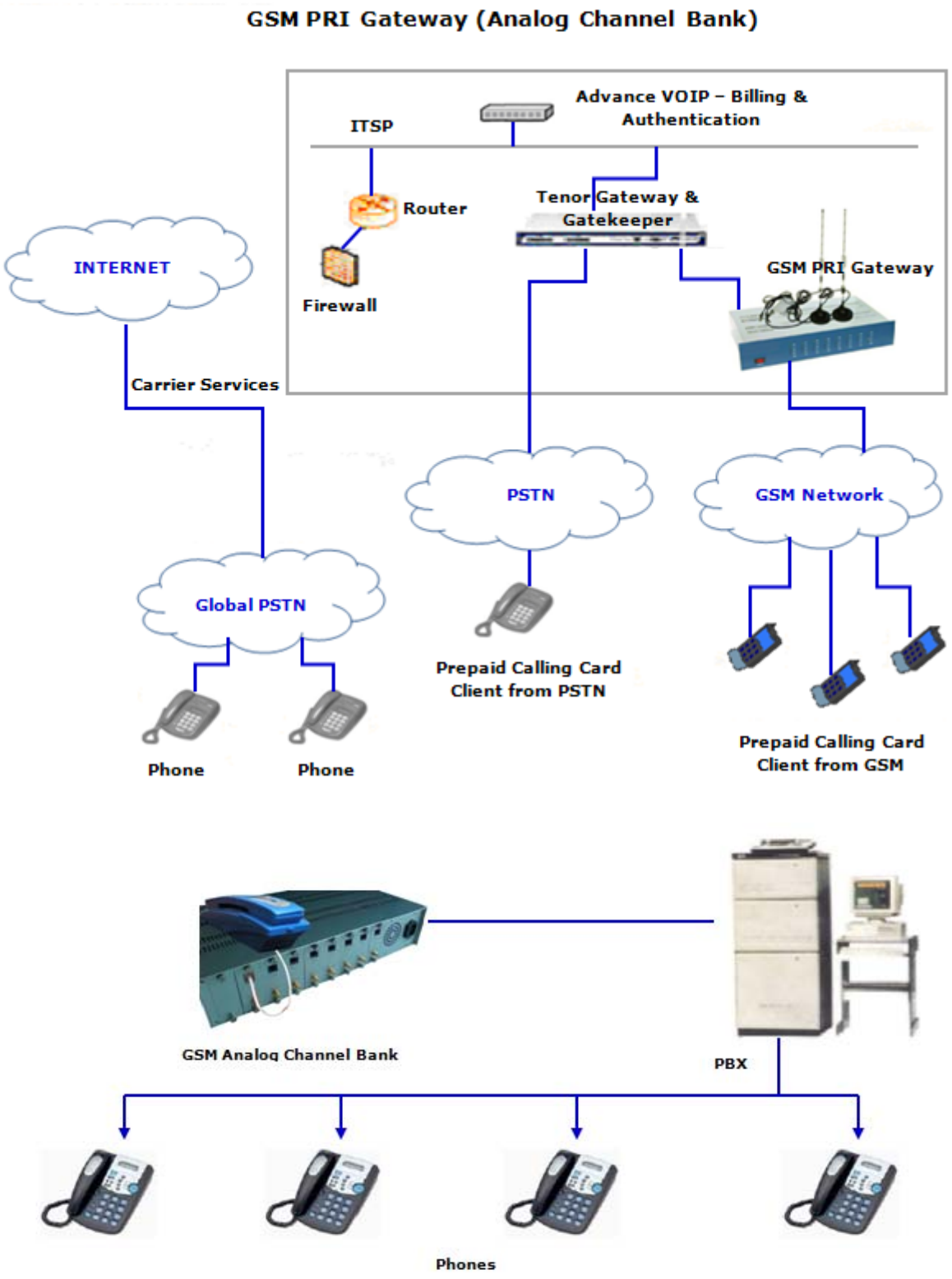
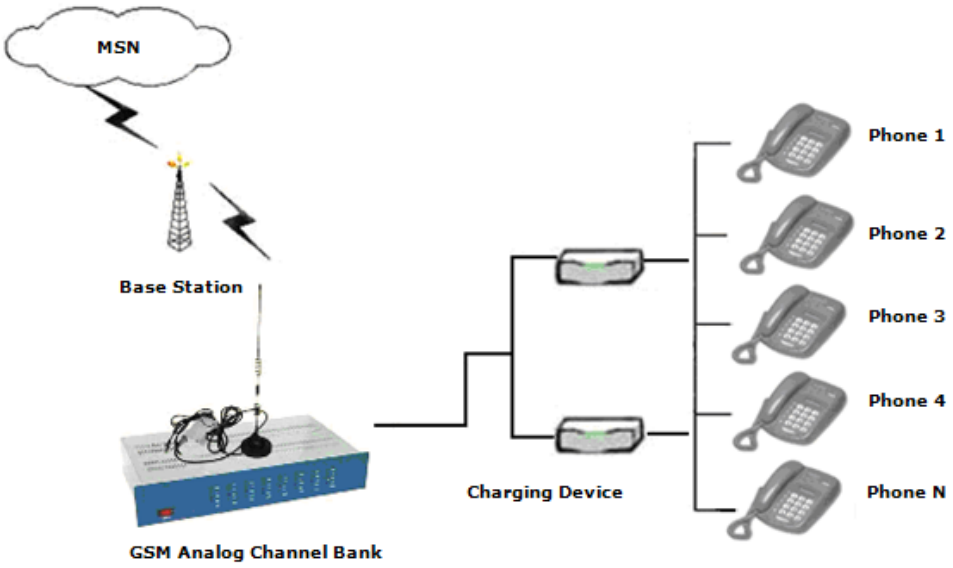
3. Instruction

a) This PRI Gateway (Analog Channel Bank) application figure:



The installation connecting to charging device

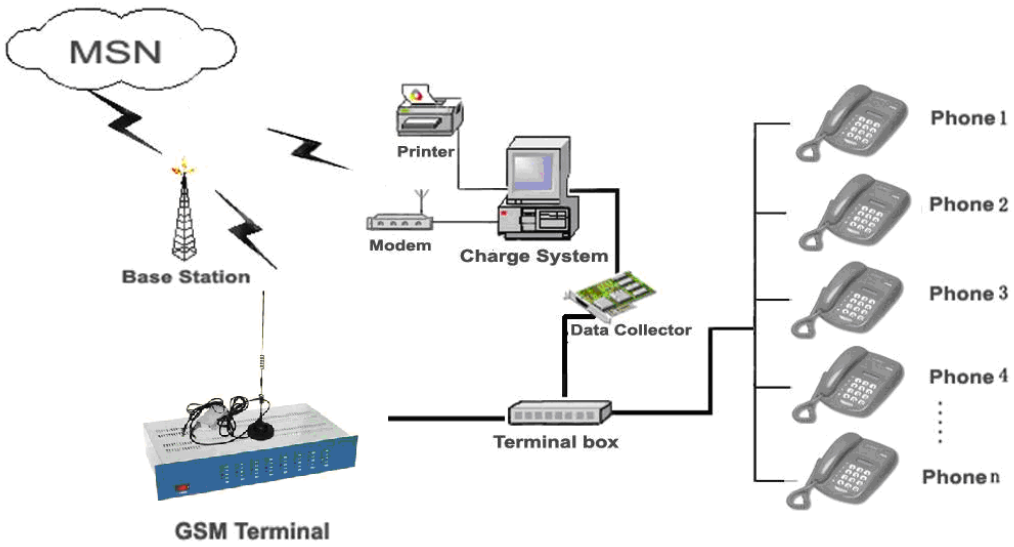


b) The front-panel indicator appearance illumination

There are pick-up or hang-up handset indicator and strong or weak signal indicator for each route of the PRI Gateway (Analog Channel Bank)

Pick up or hang up the handset: If pick up a route of the PRI Gateway (Analog Channel Bank), the pick up or hang up indicator keep bright. (Red LED). Strong or weak signal: Indicating the received signal of each route GSM Analog Channel Bank. The stronger the signal is, the more the bright lights will show. In the state of system configuration, four lights flash (Green LED)

c) Make a call



When the "strong or weak signal" indicator indicates there is enough receiving signal, pick up the telephone which connecting with the PRI Gateway (Analog Channel Bank), and you can hear the dialing tone immediately; If connecting the machine with the fee counter, it will show the telephone number you dial. After the other side picks up the phone handset, the charging machine starts working.

For shortening the network accessing time, it is suggested to press the "#" key after dialing the telephone number (means to press the "accelerates dial" key). Without dialing more numbers in 7 seconds after first dial, the first telephone number will be redialed automatically.

d) Call in

When there is a call in, the telephone rings. Pick up the phone and converse

e) The operation method of the charge machine

Please read the charge machine manual about the detailed operation method

f) Replacing SIM Card

If the SIM Card needs to be often replaced, the user can replace the single channel SIM Card without influencing others. Please press the RED key in front of the unit regarding the channel which will be replaced and make it power off separately. The power LED will be turn off and then open the front upper-cover and press the key of channel which needs to replace SIM Card, the LED light aside the SIM Card will go off. Then the SIM Card can be placing, press the key again, and the LED light aside the SIM Card will shine bright. If other SIM Cards need to be changed, it is the similar with above steps.

OTHER SPECIFICATIONS

1. Support Protocol: GSM07.10
2. Maximum RF power output: 2W (GSM)
3. Dialing Tone: 450Mhz continuum
4. Busy Tone: 450Hz 0.35S/0.35S
5. Product Shell: Steel
6. RF Parameter
7. K0dulation: -0.3GMSK
8. Channel Interval: 200KHz
9. Frequency difference: ≤0.1ppm
10. Antenna Gain: Inside keeping 3db/ outside keeping 5db
11. Antenna Resistance: 50ohm
12. Standby current: <15mA
13. Average communicating current: <300mA
14. Support 3.0V/ 1.8V SIM Card Adaptively

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TECHNOLOGY INDEX

1. Antenna interface level: 900/1800/1900Mhz, 850/900/1800/1900Mhz

GSM 850Mhz:	RX 869-894	TX 824-849
GSM 900Mhz:	RX 925-960	TX 880-915
GSM 1800Mhz:	RX 1805-1880	TX 1710-1785
GSM 1900Mhz:	RX 1930-1960	TX 1850-1910

2. SIM Card: It support 3VG-SIM Card

3. Phone Interface: Supply main and assist double frequency interface (RJ-11 Phone Interface)

   Hanging Voltage: 45V
   Picking Off Voltage: 30mA/ 41mA
   Dialing Tone Frequency: 450Hz

4. Antenna interface: Antenna Amplifying >4.5DB

5. Adapter Interface;

   INPUT: AC 175~260V
   OUTPUT: +9V/1000MA

6. Operation Circumstance;

   Operation Temperature: -10°C ~ 60°C
   Storage Temperature: -20°C ~ 70°C
   Operation Humidity: 45% - 95%
   Atmosphere pressure: 86 – 106Kpa
   Environment noise: <60DB'
   Transmitting Power: 2W
   Sensitivity: <-104Dbm
   Antenna Amplifying: >1.5db
   Dialing frequency: 450Hz
   Hanging Voltage: 45V
   Picking current: 30mA/41mA
   Power input: 85-240V

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EXCEPTION HANDLES

1. Network

After opening the GSM PRI Gateway (Analog Channel Bank), the equipment needs about 10 seconds to search for the local network of GSM. When searching the most right-hand "signal strong or weak" indicator would flash once per second until searching completes, then the "strong or weak signal" indicator starts indicating to make a phone call.

2. Power

Connect to power supply and make sure you have opened the "power switch" behind the GSM PRI Gateway (Analog Channel Bank), ("power switch" is placed in "-" appearance) and the switch key on the each route inside the equipment. While turning on the equipment, all indicators on front panel will flash once.

a) Check out the 100-200V AC power line connecting well with an alternate current electric outlet, and with the AC outlet of the PRI Gateway (Analog Channel Bank) intact.

b) If the above check can't expel the breakdown yet, please contact the dealer.

3. Speakerphone

It the speakerphone can't work normally, please check whether the operation is correct, and the connecting with GSM Analog channel bank is well. Otherwise, try to change another telephone to test whether the condition and internal circuits of the equipment work normally or not. Due to the strong shooting power of the equipment, it is suggested to use the telephone with anti-electromagnetism interference to prevent headphone from interference voice.

FEATURES/BENEFITS

- Plug-And-Play: Simple installation and easy configuration via DTMF
- Takes only minutes to install and start service
- Supports 900/1800/1900Mhz tri- band, 850/900/1800/1900Mhz quad-band
- Signal auto sensing for port hanged prevention
- Providing Low cost to setup voice directly into the GSM Network over VOIP FXO termination
- Block unwanted prefixes
- High gain external antenna with 3M cable for optional signal strength
- Quick call set up and release
- Echo cancellation
- Accurate called connected reverse polarity signal for billing
- CLID, PIN, audio set capability
- Automatic end-of-dialing after 3 seconds (no SEND key)
- Support Inbound and Outbound Caller ID display

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- Worldwide flexible power supply
- Add prefixed code automatically
- Locking wireless terminal
- Locking SIM Card
- Locking service provider
- Locking districts
- Call billing prefixed
- Caller ID blocked (optional and need network supported)
- Voice volume adjustable
- Providing corporate business fixed to mobile/ mobile to fixed telephony
- Providing rural connectivity over GSM networks
- Providing quick basic telephony provisioning
- Providing GSM connectivity for river boats, coastal cruise ships
- Providing connectivity to fixed network back-up via GSM
- Providing VPN connectivity between two corporate businesses with high security requirements, and many other more applications

DESCRIPTION FOR SETTING

Entering the setting "****2008#**" from a DTMF Phone in order to go into the Setting Mode. When hang-up the phone, it will save and quit from the setting mode.

1. **Volume Setting**

   - **#X#**: Adjust the **SPK** High or Low. **X** indicate High or Low, **X=1-4**. **1** is the **Lowest SPK**, **4** is the **Highest SPK**.

     Example:
     #2# means **SPK Volume** as **2**
     #4# means **SPK Volume** as **4**

   - **#*X#**: Adjust the **MIC** High or Low. **X** indicate High or Low, **X=1-4**. **1** is the **Lowest MIC**, **4** is the **Highest MIC**.

     Example:
     #*2# means **MIC Volume** as **2**
     #*4# means **MIC Volume** as **4**

2. **SIM Card Setting**

   a)

   - ***1X#**: X indicates priority of using **SIM Card No. X=1-4**

     Example:
     ***12#** means starting to use from **SIM Card No. 2**
     ***14#** means starting to use from **SIM Card No. 4**

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b)

- ***2*1XXX#**: Indicate **Number of times** using **SIM Card No. 1**. **XX=001-999**
- ***2*2XXX#**: Indicate **Number of times** using **SIM Card No. 2**. **XX=001-999**
- ***2*3XXX#**: Indicate **Number of times** using **SIM Card No. 3**. **XX=001-999**
- ***2*4XXX#**: Indicate **Number of times** using **SIM Card No. 4**. **XX=001-999**

Example:
***2*1008#** means the number of times using **SIM Card No. 1** is **8 times**
***2*3125#** means the number of times using **SIM Card No. 3** is **125 times**

c)

- ***3*1X#**: Indicate whether **SIM Card No. 1 enable** or **disable**.
  X=0 means **enable, X=1** means **disable.**
- ***3*2X#**: Indicate whether **SIM Card No. 2 enable** or **disable**.
  X=0 means **enable, X=1** means **disable.**
- ***3*3X#**: Indicate whether **SIM Card No. 3 enable** or **disable**.
  X=0 means **enable, X=1** means **disable**
- ***3*4X#**: Indicate whether **SIM Card No. 4 enable** or **disable**.
  X=0 means **enable, X=1** means **disable.**

Example:
***3*20#** means **SIM Card No. 2** is **disabled**
***3*41#** means **SIM Card No. 4** is **enabled**

Notes:

i. If the Setting for **SIM Card No. X** cannot be used; it will automatically skip the **SIM Card No. X** when the SIM Card is routing.
ii. Auto switching when the SIM Card is routing.
iii. If only required using **ONE SIM Card**, it should be setting to **disable** for the rest of the **3 SIM Card**. At the same time, set this **SIM Card** to **enable**, and start to use from this **SIM Card**.
iv. If using **TWO SIM Card** is **enable** (if the number of times using did not set, every **SIM Card** only will use **ONE time**), system will automatically go into the routing mode.
v. The default is using **SIM Card No. 1**.

3. Incoming Call Setting

- ***4X#**: Setting for Barring Incoming Call. **X=0** means **Barred Incoming Call**. **X=1** means **Allowed Incoming Call**.

Example:
***40#** means **Barred Incoming Call**
***41#** means **Allowed Incoming Call**

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4. **Speed Dial Setting**

   - ***5X#**: Indicate the delay time (seconds) for speed dial. **X=1-8**.

     Example:
     ***52#** means **auto dial number after 2 seconds dialing destination no.**
     ***55#** means **auto dial number after 5 seconds dialing destination no.**

5. **Setting for Factory Default**: ****000#**

   - Default Setting for **SPK** is **2**
   - Default Setting for **MIC** is **2**
   - Default Setting for **SIM Card** is using **SIM Card No. 1**
   - Default Setting for **Incoming Call** is **Barred Incoming Call**
   - Default Setting for **Speed Dial** is **Delay Time for 3 Seconds**

     Notes:

     a. The default **Number of times** using **every SIM Card** is **1**.
     b. The default for **SIM Card No. 2, SIM Card No. 3, SIM Card No. 4** is **disable** and only can use **SIM Card No. 1**. (The system will keep continuing using **SIM Card No. 1**)
     c. If need to use **SIM Card No. 2**, it cannot directly do setting for starting using **SIM Card No. 2**. It must be first setting to **SIM Card No. 2** mode, otherwise it will indicate **Error**.

DESCRIPTION FOR PANEL INDICATOR

1. **Display Indicator**: Signal Strength, SIM Card No. X currently in used (Display Alternatively)

   - **L1-L5**: Indicate the Signal Strength. **L1** means **Signal Very Weak**. **L5** means the **Signal Very Strong**.

     Example:
     L1 as **Weakest**
     L5 as **Strongest**

   - **S1-S4**: Indicate the SIM Card No. X is currently in used. **S1** means **SIM Card No. 1**, **S2** means **SIM Card No. 2**, **S3** means **SIM Card No. 3**, **S4** means **SIM Card No. 4**.

     Example:
     S2 means **SIM Card No. 2** is currently in used

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Error Indicator:

- **E1**: Indicate there is connection problem between the Modules and the PCB Board (If the display show **E1** more than 5 seconds after the terminal switch on)
- **E2**: Indicate **Cannot Read SIM Card** (**E2** and **SIM X** will take turn to display)
- **E3**: Indicate **Can Read SIM Card** but **No Signal** (**E3** and **SIM X** will take turn to display)

2. **2 LED Light Indicator**. 1 LED for "**WORK**", 1 LED for "**IN USE**"
   - **WORK**: The LED will lighten up when switch on the terminal. The LED will blink when the terminal finish register to the Network
   - **IN USE**: When the terminal is switch on, the LED will lighten up. When the terminal is switch off, the LED will switch off.
3. One "**Reset**" button. (Can press "**Reset**" button when the terminal facing problem)

Notes:

i. After the setting, please press "**Reset**" button then only start using.
ii. If the setting is wrong, there is a "**du~ du~ du~**" sound
iii. If the setting is successful, there is a "**du~…**" sound
iv. When the call is successful, then only consider as using the SIM for 1 time.
v. If the terminal indicates **Error**, wait after the Light Indicator for "**WORK**" blink, then the terminal will go into "**Setting**" mode. It cannot call out. If the user try to call out, it will indicate "**du~ du~**" sound

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